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Appl. No. 10/719,738
Reply to Non-Final Official Action of October 5, 2006

AMENDMENTS TO THE CLAIMS:

This listing and version of the claims replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently amended) A method for compensating stressed pixels on a display device, the method comprising:

receiving a video data input for displaying a video image frame at a first frequency;

displaying a primary sub-frame representing at least a part of the video image frame, the primary sub-frame having one or more predetermined stressed pixels whose brightness is expected to be compensated; and

displaying at least one secondary sub-frame having the predetermined stressed pixels thereon with predetermined compensating brightness,

wherein the primary and secondary sub-frames are displayed sequentially at a second frequency so that the separation of the two sub-frames is ~~undetected~~not detectable by a viewer.

2. (Original) The method of claim 1 wherein the primary and secondary sub-frames are displayed with the second frequency so that an effective display frequency is equivalent to the first frequency.

3. (Original) The method of claim 1 further comprising detecting one or more pixels in the video image frame as the stressed pixels.

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4. (Currently amended) The method of claim 3 further comprising determining the compensating brightness for each of the stressed pixels.

5. (Currently amended) ~~The method of claim 4 further comprising:~~ A method for compensating stressed pixels on a display device, the method comprising:
receiving a video data input for displaying a video image frame at a first frequency;
detecting one or more pixels in the video image frame as one or more stressed pixels;
displaying a primary sub-frame representing at least a part of the video image frame, the primary sub-frame having the stressed pixels whose brightness is expected to be compensated;
determining compensating brightness for each of the stressed pixels;
displaying at least one secondary sub-frame having the predetermined stressed pixels thereon with predetermined compensating brightness, wherein the primary and secondary sub-frames are displayed separately and sequentially at a second frequency so that the separation of the two sub-frames is not detectable by a viewer;

forming the primary and secondary sub-frames based on the determined compensating brightness; and

determining the second frequency based on the determined compensating brightness.

6. (Original) The method of claim 3 wherein the determining further comprises:
providing a database supplying accumulative pixel data for one or more stressed pixels, the accumulative pixel data indicating at least an accumulative brightness of each pixel; and
comparing one or more pixels in the video image frame against the database to identify the stressed pixels.

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7. (Original) The method of claim 6 further comprises accumulating pixel data in the database with regard to the identified stressed pixel based on the pixel data thereof for displaying the video image frame.

8. (Currently amended) A method for compensating stressed pixels on a light-emitting diode (LED) based display device, the method comprising:

receiving a video data input for displaying a video image frame at a first frequency;

detecting one or more pixels in the video image frame as stressed pixels;

displaying a primary sub-frame representing at least a part of the video image frame, the primary sub-frame having one or more stressed pixels with at least one of whose display parameters being degraded due to an accumulative usage of the LED display device; and

displaying at least one secondary sub-frame complementing the primary sub-frame and having the detected stressed pixels thereon with the degraded display parameter compensated,

wherein the primary and secondary sub-frames are displayed sequentially at a second frequency so that ~~a viewer perceives the video image frame being is displayed without detecting~~ making the sequential displaying of the two sub-frames detectable by a viewer.

9. (Original) The method of claim 8 wherein the primary and secondary sub-frames are displayed with the second frequency so that an effective display frequency is equivalent to the first frequency.

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10. (Original) The method of claim 8 further comprising determining compensation display data with regard to the degraded parameter for each of the stressed pixels.

11. (Currently amended) ~~The method of claim 10 wherein the displaying the primary and secondary sub-frames further comprises:~~ A method for compensating stressed pixels on a light-emitting diode (LED) based display device, the method comprising:

receiving a video data input for displaying a video image frame at a first frequency;

detecting one or more pixels in the video image frame as stressed pixels;

displaying a primary sub-frame representing at least a part of the video image frame, the primary sub-frame having one or more stressed pixels, at least one of whose display parameters is degraded due to an accumulative usage of the LED display device;

determining compensation display data with regard to the degraded parameter for each of the stressed pixels;

displaying at least one secondary sub-frame complementing the primary sub-frame and having the detected stressed pixels thereon with the degraded display parameter compensated wherein the primary and secondary sub-frames are displayed sequentially at a second frequency so that the video image frame is displayed without making the sequential displaying of the two sub-frames detectable by a viewer;

forming the primary and secondary sub-frames based on the determined compensation data; and

determining the second frequency based on the determined compensation data.

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12. (Original) The method of claim 8 wherein the detecting further comprises comparing pixels in the video image frame against a database supplying accumulative display data for one or more stored stressed pixels, the accumulative pixel data indicating at least one display parameter has been degraded.

13. (Original) The method of claim 12 further comprises accumulating the pixel data in the database with regard to the identified stressed pixel according to the displayed primary and secondary sub-frames.

14. (Original) The method of claim 8 wherein the degraded display parameter is a brightness level of the pixel.

15. (Currently amended) A system for compensating stressed pixels on a light-emitting diode (LED) based display device, the system comprising:

means for receiving a video data input for displaying a video image frame at a first frequency;

means for processing information for one or more stressed pixels in the video image frame; and

means for displaying a primary sub-frame and at least one secondary sub-frame sequentially at a second frequency so that the secondary sub-frame is ~~undetected~~ not detectable by a viewer,

wherein the primary sub-frame has one or more stressed pixels with at least one of whose display parameters being degraded due to an accumulative usage of the LED display device, and

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the secondary sub-frame has the detected stressed pixels thereon with the degraded display parameter compensated.

16. (Original) The system of claim 15 wherein the primary and secondary sub-frames are displayed with the second frequency so that an effective display frequency is equivalent to the first frequency.

17. (Original) The system of claim 15 wherein the means for processing further comprises means for determining compensation display data with regard to the degraded parameter for each of the stressed pixels.

18. (Currently amended) ~~The system of claim 17 wherein the means for processing further~~
comprises A system for compensating stressed pixels on a light-emitting diode (LED) based display device, the system comprising:

means for receiving a video data input for displaying a video image frame at a first frequency;

means for processing information for one or more stressed pixels in the video image frame, wherein the means for processing comprises means for determining compensation display data with regard to at least one degraded parameter for each of the stressed pixels;

means for displaying a primary sub-frame and at least one secondary sub-frame sequentially at a second frequency so that the sequential displaying of the primary and secondary sub-frames is not detectable by a viewer, wherein the primary sub-frame has the stressed pixels with the display parameters being degraded due to an accumulative usage of the LED display

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device, and the secondary sub-frame has the detected stressed pixels thereon with the degraded

display parameter compensated; and

means for:

forming the primary and secondary sub-frames based on the determined compensation

data; and

determining the second frequency based on the determined compensation data.

19. (Original) The system of claim 15 wherein the means for processing further comprises means for comparing pixels in the video image frame against a database supplying accumulative display data for one or more stored stressed pixels, the accumulative pixel data indicating at least one display parameter has been degraded.

20. (Original) The system of claim 15 wherein the means for processing is a video processor or controller with predetermined processing algorithms embedded therein.